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Oil slick on Lebanese shores

Report of the Secretary-General

Summary

The present report, submitted in response to the request contained in General Assembly resolution 62/188, provides an update on the progress of the implementation of Assembly resolutions 61/194 and 62/188 related to the oil slick on Lebanese shores that resulted from the bombing of el Jiyeh power plant, a civilian utility serving the general public. It builds upon the information presented in the report of the Secretary-General on the oil slick on Lebanese shores (A/62/343).

While the response of the international community was swift, there is a need for the continued support of Member States, international and regional organizations, non-governmental organizations and the private sector for Lebanon in this matter towards the creation of an eastern Mediterranean oil spill restoration fund, as well as adequate compensation by the Government of Israel.

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I. Introduction

1. The present report has been prepared by a United Nations inter-agency team, pursuant to General Assembly resolution 62/188, entitled "Oil slick on Lebanese shores". In paragraph 7 of the resolution, the Assembly requested the Secretary-General to submit to it at its sixty-third session a report on the implementation of the resolution under the item entitled "Sustainable development".

2. The report reiterates the overall assessment of the impact of the oil spill on human health, biodiversity, fisheries and tourism, and implications for livelihoods and the economy of Lebanon presented in the previous report of the Secretary-General on this subject (A/62/343), updating it where applicable, and includes an account of progress made in approaching the Government of Israel in assuming responsibility for prompt and adequate compensation to the Government of Lebanon; an overview of the progress made in cleaning up and rehabilitating the polluted shores and sea of Lebanon with a view to preserving its ecosystem; and an account of progress made in the establishment of an eastern Mediterranean oil spill restoration fund.

II. Impact of the oil spill on human health, biodiversity, fisheries and tourism, and implications for livelihoods and the economy of Lebanon

3. The marine oil spill resulted in the release of about 15,000 tons of fuel oil into the Mediterranean Sea, leading to the contamination of 150 km of coastline in Lebanon, extending to the Syrian Arab Republic. In paragraph 2 of resolution 62/188, the General Assembly reiterates the expression of its deep concern about the adverse implications of the destruction by the Israeli Air Force of the oil storage tanks in the direct vicinity of the Lebanese el Jiyeh electric power plant for the achievement of sustainable development in Lebanon, and in paragraph 3 it considers that the oil slick has heavily polluted the shores of Lebanon and partially polluted Syrian shores and consequently has had serious implications for livelihoods and the economy of Lebanon, owing to the adverse implications for natural resources, biodiversity, fisheries and tourism, and for human health, in the country.

4. Several United Nations and other international agencies, including the Food and Agriculture Organization of the United Nations (FAO), the International Union for Conservation of Nature (IUCN), the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP) and the World Bank, were involved in assessing the implications of the oil spill for human health, biodiversity, fisheries and tourism in Lebanon. The reports of those agencies, together with those of the Government of Lebanon and UNEP/Mediterranean Action Plan/Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), provided a prompt and reasonably comprehensive account of the immediate impact and response. A summary of the combined findings was presented to the General Assembly at its sixty-second session (see A/62/343), taking into account the social impact (public health and safety), the economic impact (clean-up, monitoring and opportunities lost) and the environmental impact (ecological and physico-chemical effects).

5. In October 2006, UNEP conducted a post-conflict environmental assessment of Lebanon. It should be noted that the UNEP report focused on assessing environmental conditions (water, sediment and biota) in the near-shore zone, rather than the littoral zone where oiling was heaviest and clean-up was ongoing at the time. The UNEP findings on the adverse impact on the coastal and marine environment, which were released in January 2007,[1] and updated during the United Nations inter-agency missions of October 2007 and June 2008, can be summarized as follows:

(a) The oil spill resulting from the bombings of el Jiyeh power plant on 13 and 15 July 2006 caused significant contamination of the Lebanese coastline. The seabed at el Jiyeh was significantly affected by the oil spill. Clean-up operations by local and international organizations are continuing at certain locations. A full survey is needed to evaluate the current conditions of the Lebanese coastline, and the Ministry of the Environment is in the process of initiating one;

(b) A proportion of the oil spilled sank in the vicinity of el Jiyeh as a result of loss of volatiles after burning and incorporation of sand, covering the seabed over an area of a few hundred metres out to sea and smothering biota in the sediment. The oil that did not sink either evaporated, adding volatile organic compounds to the atmosphere,[2] or was caught in the northbound current and transported up the Lebanese coast, reaching the Syrian Arab Republic. The prevailing south-east wind also prevented the oil from spreading out to sea, pushing it instead northwards towards land against the predominantly rocky and coarse-sediment coastline. Most of the oil contamination adhered to the coast, coating surfaces, filling voids in coarse sediment and adding petroleum hydrocarbon contamination in the seabed sediment in two areas at depths of between 4 and 25 m along the coast;

(c) Harbours, coves, caves and small natural bays were affected in particular, as the oil tended to get trapped in them. Affected locations included the biologically important sites of Palm Islands Nature Reserve, archaeologically significant areas in Byblos and Anfeh and various beaches and fishermen's wharfs that are important from the standpoint of the economy and tourism;

(d) The flora and fauna on rocks and sandy beaches that were directly exposed to the oil were also affected. Significant mortality as a result of toxicity or smothering probably occurred among littoral invertebrates such as gastropods, polychaetes, crustaceans and algae, especially on heavily contaminated beaches. The full recovery of those habitats is likely to take some years. It is recommended that all available shoreline data on oil concentrations, oil weathering indicators and flora and fauna parameters should be collected to add to the UNEP near-shore findings. Following this, focused monitoring on a routine and long-term basis at various sites may be used to assess the continuing impact of the oil spill in terms of status, trends and recovery;

(e) In October 2006, the concentrations of polycyclic aromatic hydrocarbons and petroleum hydrocarbons in seabed sediment, oysters and fish were found to be similar to those in areas under anthropogenic influence for the eastern part of the

[1] See http://postconflict.unep.ch/publications.php?prog=lebanon.

[2] Oceanography Centre, University of Cyprus, Nicosia, 2006, "Oil spill modelling predictions in the Mediterranean (Lebanon coastal oil spill pollution)".

Mediterranean. An analysis of marine waters sampled three months after the spill detected traces of oil dispersed and dissolved in the water only in the affected areas;

(f) The bombing of el Jiyeh power plant, a civilian utility serving the general population, occurred close to the beginning of the conflict. Hostilities were therefore ongoing during the critical early days of the oil spill, and security conditions severely hampered access to the coastline, as well as any potential large-scale oil clean-up response operations;

(g) The clean-up of the oil spill has left in its wake substantial quantities of oily liquids and solids and oil-contaminated debris and soils. The safe disposal of that waste remains a serious concern, as Lebanon has no environmentally acceptable disposal facilities for such waste streams. Mobilization of international technical assistance and development partner support is still needed to create an environmentally acceptable disposal solution.

6. The present report is submitted approximately two years after the oil spill. The concentrations of pollutants and the biological parameters are being monitored on a routine basis to attempt to track the recovery of affected sites and the general state of the environment. United Nations agencies and other international partners, in collaboration with the Government of Lebanon, are planning programmes for the development of a system for monitoring environmental quality, including for polluted areas.

7. In August 2006, UNDP initiated a rapid environmental assessment, based on existing research and observations, which was completed in December 2006 and published in February 2007.[3] The report identified 46 environmental impacts, of which 9 were marine oil-spill related and classified as follows:

(a) Severe (2): littoral pollution from oil spill (medium term, or 1-10 years) and impact on marine biodiversity (especially rocky biogenic reefs and Palm Islands Nature Reserve) from oil spill from el Jiyeh power plant (long term, or 10-50 years);

(b) Critical-significant (3): air pollution from el Jiyeh fire (short term, or less than 1 year),[4] marine sediment impact from sunken oil (medium term, or 1-10 years) and soil pollution from deposited contaminants as a result of burning fuel at el Jiyeh (medium term, or 1-10 years);

(c) Critical but non-significant (2): impact on seawater quality from oil spill (short term, or less than 1 year) and soil impact at el Jiyeh site (medium term, or 1-10 years);

(d) Marginal (1): pollution affecting plants and ecosystem as a result of burning fuel at el Jiyeh (short term, or less than 1 year);

(e) Negligible (1): impact on coastal aquifers from oil spill (short term, or less than 1 year).

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[3] See www.undp.org.lb/communication/archives/REA.cfm.

[4] The report addresses the issue of air pollution as a result of fuel burning, stating that the "estimated 60,000 m^3 of fuel that burned are thought to have caused extensive atmospheric contamination in a plume reportedly reaching as far as 60 km, releasing 2.45PJ of heat". The report also states that in the vicinity of el Jiyeh, the atmospheric plume may have caused some short-term respiratory symptoms among the exposed population, in addition to contributing to adverse climate change.

8. The UNDP report also addressed the impact of the oil spill on cultural heritage, describing how archaeological structures in Byblos were severely affected by the oil spill from the power plant: stones at the base of two medieval towers at the entrance to the harbour were covered by a thick layer of fuel and other ancient ruins from various periods, located below the archaeological tell, were also covered by a layer of fuel.

9. The UNDP report pointed out that a national clean-up operation of the Lebanese coast could not start immediately after the spill occurred or even after the ceasefire owing to the air and marine blockade enforced by the Israeli army on Lebanon as well as to the lack of human, material and financial resources. Existing resources were devoted to attending to humanitarian aid and immediate public health needs. Although the logistical work related to the clean-up operations was initiated earlier through minor pilot interventions, the major clean-up operations could not start until a few weeks after the ceasefire. Moreover, the bombardment of bridges and roads also delayed the onset of the clean-up operations.

10. The UNDP report also highlighted the issue of clean-up and waste management, in particular in the light of the lack of necessary infrastructure in Lebanon. In an effort to try to fill that acknowledged gap, UNDP funded ($200,000) and pursued oil spill management coordination with the Ministry of the Environment of Lebanon. This included day-to-day technical coordination and management activities, as well as the writing of a book on the oil spill and the development of a website dedicated to the issue.

11. UNDP also funded a study to assess and review the clean-up and possible treatment of the waste, and during the period from November 2007 to June 2008 it was able, with the support of partners and in coordination with the Ministry of the Environment of Lebanon:

(a) To remove recovered oil-spill waste stored in an urban area (Tabarja, northern Lebanon) and transport it appropriately to the temporary storage site at a sanitary landfill for inert materials (Bsaleem, Mount Lebanon);

(b) To launch a request for proposals to remove recovered oil-spill waste still stored along the shore in the area of el Jiyeh and to transport it to one of the temporary storage sites designated by the Government;

(c) To initiate a $550,000 grant from the Canadian International Development Agency, for oil-spill waste management (first-level management, including, but not limited to, sorting, packaging and labelling);

(d) To liaise with the Government of Finland for potential funding of €330,000 in support of waste management and environmental monitoring.

12. The Canadian International Development Agency had previously allocated, through the UNDP Bureau for Crisis Prevention and Recovery, $1.1 million to help fishermen's associations in Lebanon to repair damaged boats as well as to provide fishing nets and engines and to rebuild the fish market in the suburbs of Beirut. UNDP also facilitated clean-up operations at the fishermen's wharf in Beirut with funding of approximately $175,000 from the Fund for International Development of the Organization of Petroleum Exporting Countries (OPEC), as well as at three sites south of Beirut with funding of $850,000 from the Canadian International Development Agency. It also initiated clean-up activities at four sites between

Beirut and el Jiyeh with funding of $1 million from the Government of Japan. A total of 200 extra copies of the report entitled *Lebanon Rapid Environmental Assessment for Greening Recovery, Reconstruction and Reform — 2006*[3] were printed and the executive summary translated into Arabic and published. UNDP used that report as a key reference in developing oil-spill-related proposals and projects.

13. During the preliminary stage of the response to the oil spill, the International Maritime Organization (IMO) undertook work on the affected area through the Regional Marine Pollution Emergency Centre, providing funding for an expert to provide overall coordination and management of the spill response and to assist the Lebanese authorities.

14. During that period, the Emergency Centre, with seconded personnel sent by Environment Canada, the Maritime and Coastguard Agency of the United Kingdom of Great Britain and Northern Ireland, the European Commission (through the European Maritime Safety Agency) and the French Naval Academy, also provided technical advice to the Lebanese authorities.

15. The International Union for Conservation of Nature task force and assessment team arrived in Lebanon after the hostilities, on 15 August 2006. The main findings of their mission[5] included the following:

(a) It is clear that much of the shoreline ecosystem was physically and chemically contaminated. The impact included significant mortality and impairment of the structure and function of the shoreline ecosystem. Of particular concern with shoreline oiling is the impact on vermetid terraces/coralline reef communities. Populations of sand-beach meiofauna have been diminished by up to 90 per cent in places, according to the National Council for Scientific Research.[6] Those organisms are prey for fish, and thus fish stocks might decrease, with possible consequential economic losses;

(b) The oil spill had a direct impact on biodiversity hot spots and fragile marine ecosystems, such as Palm Islands Nature Reserve, one of only two marine protected areas in the country;

(c) Oil from the spill that covered the shoreline for a long period was seen to have posed a serious threat to migrating birds, marine turtles and other fauna and flora all along the shore, specifically in Palm Islands Nature Reserve and in the Damour area. Marine life in shallow waters could have been adversely affected, although Lebanon is thought to have no seagrass, a biotope particularly sensitive to oil spills. There may have been an impact on sand dunes in northern Lebanon, specifically in Palm Islands Nature Reserve;

(d) The period from July through September is the hatching season for marine loggerhead turtles (Caretta caretta) and green turtles (Chelonia mydas). It is likely that those endangered species have been exposed to residual oil on beaches as well as in offshore waters. Such exposure may result in mortality or have sublethal effects, including carcinogenesis and physiological and reproductive impairment. It

[5] See the report of the Lebanon Oil Spill Rapid Assessment and Response Mission.

[6] G. Khalaf, K. Nakhle, M. Abboud-Abi Saab, J. Tronczynski, R. Mouawad and M. Fakhri, "Preliminary results of the oil spill impact on Lebanese coastal waters", *Lebanese Science Journal*, Vol. 7, No. 2, 2006.

is likely that slow-moving and benthic species have been the most affected fauna in the area of el Jiyeh power plant, where the most significant amount of oil sank to the seabed;

(e) In general, marine birds are affected by oil spills, either through plumage oiling and loss of thermoregulation and buoyancy, or through acute poisoning during preening, decrease in reproduction or damage to food source and habitat. Southerly bird migration along the coastal zone of Lebanon starts in September. Some 100 oiled birds were observed in Palm Islands Nature Reserve. It is almost certain that others were exposed but went unnoticed at sea or along unmonitored segments of the shoreline;

(f) The likely degradation of the ecosystem (deterioration of vegetation, disturbance to wildlife and destruction of delicate habitats and endangered species of fauna and flora) means that an integrated impact and recovery assessment programme is needed for the conservation of biodiversity.

16. IUCN contributed to the mobilization of funds from the Government of Switzerland for the clean-up of Palm Islands Nature Reserve through an economic development project benefiting the local communities and the affected fishermen in northern Lebanon. Furthermore, IUCN established a pilot monitoring project on the Reserve with funding from Italian Cooperation, in close coordination with the Ministry of the Environment and academia; the project will be further developed with funding from the Government of Spain. IUCN also documented the oil spill in a 35-minute documentary that was funded by Italian Cooperation and supported by the Ministry of the Environment and shown internationally, winning an award in September 2007 at an international film festival in La Maddalena, Italy.

17. In September 2006, FAO conducted a damage assessment of the agriculture and fisheries sectors upon the request and in cooperation with the Ministry of Agriculture of Lebanon. It fielded an assessment mission (a) to evaluate the overall damage caused to the farming and fishing communities and (b) to elaborate an early recovery programme for the immediate needs of the most vulnerable farming and fishing communities in the affected areas.

18. The FAO report was released in November 2006.[7] The conclusions reached in respect of the impact of the conflict on the marine fisheries sector are set out in paragraphs 19 and 20 below.

19. Total losses in the fisheries sector were estimated at $9.73 million. They included the loss of boats and other equipment and the destruction of a fishermen's cooperative. The oil spill also affected fisheries by blocking harbours and fouling vessels, gear and mooring lines. Fishing vessels became inoperable owing to engine damage from the oil. Such direct impact caused economic losses, while indirect effects ranged from loss of income to difficulties in the marketing of fishing-related products. From the outbreak of the conflict on 12 July 2006 to the lifting of the sea blockade by Israel on 9 September 2006, no fishing was possible and, accordingly, no income was generated. The follow-on effect was loss of income for those involved in selling fish, operating specialized fish restaurants and providing services to the fishing industry. After fishing operations resumed, Lebanese consumers were

[7] FAO, Rome (2006), *Lebanon: Damage and Early Recovery Needs Assessment of Agriculture, Fisheries and Forestry.*

reluctant to consume fish owing to food safety concerns, contributing to a reduction in market demand.

20. The fishing community suffered enormously as a result of the hostilities of July 2006, both directly, as a consequence of hostile action, and indirectly, because of loss of income associated with the conflict and its after-effects. Future actions are required to ensure sustainable development and an improvement in the livelihoods of the fishing communities, further clean-up of harbours and shorelines and preservation of coastal marine life.

21. The World Bank carried out an economic assessment of environmental degradation resulting from hostilities.[8] The overall costs were estimated at between $527 million and $931 million, averaging $729 million, or about 3.6 per cent of the gross domestic product of Lebanon in 2006. Table 1, drawn from the World Bank assessment report, lists the damage by category of impact. Table 2, also drawn from that report, provides information about the estimated damage costs of the oil spill, which average $203 million. It is important to note that those estimates do not, however, cover the impact of the oil spill on health, ecosystem services and marine biodiversity or the costs of clean-up operations to be carried out in future. Hence, it is probable that the overall damage costs resulting from the oil spill are underestimated.

Table 1
Estimated cost of environmental degradation caused by the hostilities in Lebanon in July 2006

Category	*Minimum*	*Maximum*	*Average*	*Percentage of gross domestic product*[a]
	(Millions of United States dollars)			
Waste	206.8	373.5	290.2	1.4
Oil spill	166.3	239.9	203.1	1.0
Water	131.4	131.4	131.4	0.6
Quarries	15.4	175.5	95.5	0.5
Forests	7.0	10.8	8.9	0.0
Air	—	—	—	—
Total	**526.9**	**931.1**	**729.0**	**3.6**

Source: World Bank, 2007.

[a] Based on estimated gross domestic product of $20.5 billion for 2006 (Economic Intelligence Unit, 2006).

[8] World Bank (2007), *Republic of Lebanon: Economic Assessment of Environmental Degradation Due to July 2006 Hostilities*, report No. 39787-LB, Washington, D.C.

Table 2
Estimated cost of damage and clean-up relating to the oil spill

	Minimum	*Maximum*	*Mean*
	(Millions of United States dollars)		
Category of damage			
Hotels	22.8	59.6	41.2
Beach resorts, chalets, public beaches	13.2	34.8	24.0
Marine sports activities	4.0	4.2	4.1
Palm Islands Nature Reserve	0.7	1.2	1.0
Byblos	0.1	0.1	0.1
Restaurants	19. 5	31.1	25.3
Commercial fishing	3.0	5.9	4.4
Seashore fishing	0.3	0.5	0.4
Oil fuel burned	39.1	39.1	39.1
Subtotal	**102.8**	**176.4**	**139.6**
Clean-up			
Expenditure already made	14.9	14.9	14.9
Oiled waste	48.2	48.2	48.2
Monitoring	1.5	1.5	1.5
Subtotal	**63.5**	**63.5**	**63.5**
Total	**166.3**	**239.9**	**203.1**

Source: World Bank, 2007.

22. The World Bank considered that the oil slick had had serious implications for livelihoods and the economy of Lebanon owing to the adverse impact on natural resources, biodiversity, fisheries and tourism, and human health in the country.

23. The World Health Organization (WHO) conducted a fact-finding mission to Lebanon and published a report in that regard.[9] The WHO assessment looked at the health-care institutions in those districts that were primarily affected by the conflict. In all, 83 per cent of the health facilities were surveyed; 26 per cent of those facilities were not functioning, 6 per cent were partially functioning and 35 per cent were inaccessible by road because of the destruction of roads and bridges and/or the presence of unexploded ordnance.

24. WHO, together with other international agencies, supported the country in its recovery efforts. It concentrated its efforts on maintaining the provision of priority medical and quality health interventions. The clear priorities were:

[9] WHO Regional Office for the Eastern Mediterranean (2007), *Report on health conditions in Lebanon and the occupied Palestinian territory: implementation of resolution EM/RC53/R.6, Part 2, Health Conditions in Lebanon.*

(a) The distribution of essential drugs, medical supplies and chlorine for water disinfection through a Ministry of Public Health-WHO warehouse;

(b) The rehabilitation of health centres and the re-establishment of health-care services;

(c) Surveillance and control of communicable diseases;

(d) An immunization campaign against measles and polio;

(e) Ensuring the safety of drinking water.

25. In addition, researchers from the Lebanese National Council for Scientific Research and the French Research Institute for Exploitation of the Sea found that the tissue of mussels in affected areas was heavily contaminated by polycyclic aromatic hydrocarbons, with concentrations well above the relevant WHO guideline values.

26. WHO is encouraged to continue supporting the recovery efforts of Lebanon, including by conducting environmental epidemiological studies to look into the potential long-term adverse impact on the health of exposed populations. Clearly, the establishment of a health database is a high priority and remains to be done. Such a health registry would facilitate the tracking of long-term health outcomes (dermatitis, bronchitis and so forth) for marine oil-spill workers and citizens in primary zones affected by burned oil plumes.

III. Assumption of responsibility for prompt and adequate compensation by the Government of Israel: progress made

27. In paragraph 4 of its resolution 62/188, the General Assembly called upon the Government of Israel to assume responsibility for prompt and adequate compensation to the Government of Lebanon and other countries for the costs of repairing the environmental damage caused by the destruction, including the restoration of the marine environment. This echoed the earlier request made by the Assembly in paragraph 3 of its resolution 61/194.

28. The Government of Israel has yet to assume its responsibility for providing prompt and adequate compensation to the Government of Lebanon. A response from the Government of Israel to resolution 61/194 was formally sought by a letter, dated 16 August 2007, from the UNEP Post-Conflict and Disaster Management Branch to the Permanent Mission of Israel to the United Nations Office at Geneva, but no such response was received. A further letter, dated 5 June 2008, was sent from the Executive Director of UNEP to the Permanent Representative of Israel to UNEP, highlighting the renewed request for action on the part of Israel contained in resolution 62/188. No response has been received to either of those communications. In the absence of an official response from Israel, it is difficult to report on progress.

29. In 2007, UNDP reviewed the many conventions that relate to oil pollution at sea, which many eastern Mediterranean countries have signed, as well as other possible agreements or compensation schemes. Unfortunately, none of those conventions is applicable during armed hostilities. In addition, the agreements that

relate to spill compensation[10] pertain only to oil spills from tanker vessels at sea, not to land-based incidents. In 2007, UNDP recommended examination of the United Nations Compensation Commission as the only precedent-setting major oil-spill compensation regime for spills resulting from armed hostilities.[11]

30. All littoral States of the eastern Mediterranean are signatories to the only oil-spill convention that relates to cooperation in response to spills arising from coastal oil-handling facilities and not merely from tankers: the International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990, which entered into force in 1995 and which is aimed at facilitating international cooperation and mutual assistance among States and regions. The spirit of the Convention clearly could not be fully observed during the hostilities of July 2006 and in the aftermath of the marine oil spill.

31. Although not specifically concerned with issues relating to spill compensation or non-accidental acts during war hostilities, that Convention could nevertheless be utilized for future capacity-building and regional cooperation in the area of spill planning. Israel, Lebanon and the Syrian Arab Republic should be strongly encouraged to take a leadership role in a thorough post-spill review, hosted by the Regional Marine Pollution Emergency Centre, of Convention-related activities in the eastern Mediterranean Sea. Other regional signatories to the Convention that could have been affected by the spill, including via aerial transfer combustion products, are Egypt, Greece, Jordan and Turkey.

32. The Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean also sets out, in article 9, the following obligations of the parties to cooperate in dealing with pollution emergencies:

> The Contracting Parties shall cooperate in taking the necessary measures for dealing with pollution emergencies in the Mediterranean Sea area, whatever the causes of such emergencies, and reducing or eliminating damage resulting therefrom;
>
> Any Contracting Party which becomes aware of any pollution emergency in the Mediterranean Sea area shall without delay notify the Organization and, either through the Organization or directly, any Contracting Party likely to be affected by such emergency.

33. The Government of Lebanon notified the Regional Marine Pollution Emergency Centre of the oil spill by a letter dated 21 July 2006 and embassies of neighbouring countries by letters dated 27 July 2006.

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[10] The International Convention on Civil Liability for Oil Pollution Damage, 1969, and the 1992 Protocol thereto; the 1992 Protocol to the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (International Oil Pollution Compensation Fund); and the 2003 Protocol on the Establishment of a Supplementary Fund for Oil Pollution Damage (Supplementary Fund Protocol).

[11] By its resolution 687 (1991), the Security Council created an indemnification fund for damages and harm caused following the invasion of Kuwait. As a result, millions of dollars were disbursed as compensation for lost revenues during the recession in Kuwait. For the first time, paying indemnities for damaging the environment and destroying natural resources was expressly allowed.

34. A range of recovery measures to respond to the oil spill have been suggested as a positive step towards biodiversity conservation and the restoration of livelihoods in the region.

IV. Progress made in the provision of financial and technical assistance in support of the efforts of the Government of Lebanon to clean up the polluted shores and sea of Lebanon with a view to preserving its ecosystem

35. In paragraph 5 of its resolution 62/188, the General Assembly encouraged Member States, regional and international organizations, regional and international financial institutions, non-governmental organizations and the private sector to continue their financial and technical assistance to the Government of Lebanon towards achieving the completion of clean-up and rehabilitation operations, with the aim of preserving the ecosystem of Lebanon and that of the Eastern Mediterranean Basin.

36. When the oil spill occurred in July 2006, the national response capacity was overwhelmed because of the ongoing conflict, the simultaneous need for a massive humanitarian response, the destruction of infrastructure and the land, air and sea blockade by Israel. Those factors also impeded initial international assistance efforts. During the conflict, the Ministry of the Environment of Lebanon mobilized resources with its partners in the international community. It also coordinated preventive interventions, such as the construction of barriers to protect industry and the coastline from further spillage. After the end of the conflict, some international assistance was provided and clean-up operations started.

37. The Ministry of the Environment implemented a two-phase clean-up plan as and when materials and resources were provided by the various bilateral partners and international organizations, as described in its report of July 2007.

38. During the first phase, the priorities set by the Ministry of the Environment were to recover free-floating oil from the sea and confined areas; clean areas with potential for direct human contact or risk to public health; rehabilitate areas where oil slicks hampered economic activities; and address direct threats to environmentally or culturally important sites. This not only followed the three-part approach to sustainable development (social, economic and environmental) but was also consistent with best practices in protection and clean-up prioritization.

39. Phase I was completed in February 2007, in partnership with various Member States and organizations, including the Government of Italy, the Swiss Agency for Development and Cooperation, the Canadian International Development Agency, the United States Agency for International Development, and the Fund for International Development of OPEC, as well as local non-governmental organizations (see annex).

40. Following the completion of phase I, between April and May 2007 the Ministry of the Environment conducted a survey of the Lebanese coast to determine the scope of work for phase II, which focused primarily on the removal of fuel from rocks, wave-cut platforms, cliffs and infrastructure. An underwater survey of the near-shore and littoral zones of the coast between the northern zone (Abdeh-Akkar)

and the southern zone (Jadra) was carried out by the Ministry and financed by UNDP. In the course of the survey, submerged oil was observed in the area of the town of el Jiyeh and near Byblos, where tar balls are still being washed ashore.

41. Clean-up work followed, sponsored by the Government of Japan through UNDP,[12] the Government of Norway through the Higher Relief Commission in Lebanon,[13] the United States Agency for International Development[14] and the Government of Spain through the Spanish Agency for International Cooperation and Development.[15]

42. By June 2008, approximately 500 m^3 of liquid and 3,120 m^3 of semi-solid and solid waste had been collected during both phases of the clean-up operation and appropriately stored in containers in secure temporary storage sites.[16] Some waste is also being stored temporarily at clean-up sites, pending its transportation to more secure storage sites shortly.

43. Upon the request of the Government of Lebanon, two studies were undertaken in connection with treatment and disposal options in respect of oil-spill waste. The first, entitled "Assessment and review of oil spill clean-up waste and review of possible treatment options", was funded by UNDP and published in July 2007. The second, entitled "Study for the management of oily wastes generated by the cleaning operations of the Lebanese coast following the oil spill of Jiyeh", which was published in December 2007, was funded by the Ministry of Finance and Industry of France and implemented in coordination with the Council for Development and Reconstruction in Lebanon. Both studies highlight the fact that Lebanon currently lacks the infrastructure to ensure the environmentally sound treatment of such waste. On the basis of those findings, the Ministry of the Environment formulated a brief project proposal on sound environmental waste management, including a schematic diagram. Limited funding has been provided so far; co-funding is still needed if the objectives are to be achieved.

44. In the light of the international meeting convened in Athens on 17 August 2006 by IMO and UNEP, hosted by the Government of Greece, which reached agreement on the Action Plan prepared by the Experts Working Group for Lebanon under the supervision of the Regional Marine Pollution Emergency Centre and the Minister for the Environment of Lebanon, and given the fact that the General Assembly, in paragraph 4 of its resolution 61/194, encouraged Member States, regional and international organizations, regional and international financial institutions, and non-governmental organizations and the private sector to provide financial and technical assistance to the Government of Lebanon in support of its efforts to clean up the polluted shores and sea of Lebanon with a view to preserving its ecosystem,

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[12] Clean-up operations in areas surrounding Dalieh fishermen's wharf in Beirut and Jiyeh — four lots in total (September-November 2007) — under the technical supervision of the Ministry of the Environment of Lebanon.

[13] On 1 November 2007, a memorandum of understanding was signed between the Government of Norway and the Government of Lebanon, under which clean-up operations took place in six areas in North and South Beirut under the technical supervision of the Ministry of the Environment (December 2007-February 2008).

[14] Clean-up operations carried out in 21 areas between Tabarja and Anfeh under technical supervision of the Ministry of the Environment (September 2007-May 2008).

[15] Mobilization in May 2008 of the oil-spill clean-up project on Palm Islands Nature Reserve.

[16] Information from the Ministry of the Environment of Lebanon, June 2008.

the Government of Greece allocated $1.6 million for the implementation of an environmental monitoring project in Lebanon.

45. Assistance for phase I is estimated at almost $15 million, according to table 2.24 of the World Bank report published in 2007.[8] The total cost of waste collection was lower that the original estimate. However, given the fall in the value of the United States dollar against the euro, the total cost is now estimated at about $18.5 million.

46. It should be noted that the Ministry of the Environment estimated the cost of the clean-up at $150 million, based on an applied model of costs per ton spilled, while the Experts Working Group for Lebanon estimated the overall cost of clean-up and rehabilitation at between $137 million and $205 million. The Experts Working Group for Lebanon recommended that range as an upper limit, with €50 million ($77.8 million at an exchange rate of €1:$1.556 as at 6 August 2008) as the minimum value. The Working Group therefore proposed that the search for funding be based on an initial amount of €50 million ($77.8 million) for 2006, with possible complements for 2007.[17]

47. Total assistance received by Lebanon as of June 2008 amounted to about 10 per cent of the average upper limit range, and only about 24 per cent of the minimum value. Furthermore, the lower estimate of €50 million ($77.8 million) arrived at by the Regional Marine Pollution Emergency Centre was based substantially on the cost of one major Mediterranean spill (Haven, 1991), which had similarities with, but also some significant differences from, the spill in Lebanon.

V. Mobilization of international technical and financial assistance through donor support for the creation of an eastern Mediterranean oil spill restoration fund: progress made

48. In paragraph 6 of its resolution 62/188, the General Assembly called for the mobilization of international technical and financial assistance through donor support for the creation of an eastern Mediterranean oil spill restoration fund, based on voluntary contributions, to support the integrated environmentally sound management, from clean-up to safe disposal of oily waste, of the environmental disaster resulting from the destruction by the Israeli Air Force of the oil storage tanks at el Jiyeh electric power plant.

49. So far, no progress has been made towards the creation of the fund, possibly owing to the fact that no practical or operational mechanism has been identified and put forward. It is important that the General Assembly entrust the Secretary-General with the task of establishing, in coordination with the adversely affected Member

[17] Experts Working Group for Lebanon, Lebanon Marine and Coastal Oil Pollution International Assistance Action Plan, 25 August 2006. Members of the Experts Working Group for Lebanon include the Joint Environment Unit of UNEP and the Office for the Coordination of Humanitarian Affairs, the European Commission Monitoring and Information Centre, the International Tanker Owners Pollution Federation Ltd., UNDP, Instituto Centrale per la Ricerca Scientifica e Tecnologica Applicata al Mare, the Oceanography Centre, University of Cyprus, and Centre de Documentation de Recherche et d'Experimentations sue les Pollutions Accidentelles des Eaux.

States of the eastern Mediterranean, such a fund in accordance with paragraph 6 of resolution 62/188. This could be done utilizing existing United Nations entities and available mechanisms.

VI. Conclusions

50. The Secretary-General wishes to commend the ongoing efforts made by the Government of Lebanon to address the impact of the oil spill and to urge the Government of Israel to take the necessary actions towards assuming responsibility for prompt and adequate compensation to the Government of Lebanon. The Secretary-General would also like to commend the efforts made by the United Nations system in responding to the emergency and to the requests of the Government. While the response of the international donor community has been both generous and timely, given the particularities of the cause and the circumstances prevailing at the time of the oil-spill incident and after, the Secretary-General would urge Member States, international organizations, international and regional financial institutions, non-governmental organizations and the private sector to continue their support for Lebanon in this matter, in particular for rehabilitation activities on the Lebanese Coast, as well as in the broader recovery effort. The international effort should be intensified, since Lebanon is still engaged in oil removal, waste treatment and recovery monitoring. It should also be recognized that the oil spill is not covered by any of the international oil-spill compensation funds, and thus merits special consideration. To this end, the Secretary-General commends that the eastern Mediterranean oil spill restoration Fund be established.

Annex

Member States, regional and international organizations, regional and international financial institutions, governmental and non-governmental organizations and private sector entities that had provided financial and technical assistance to the Government of Lebanon as at 24 June 2008

	Cash contributions	*Technical assistance*[a]	*Equipment*[b]	*Contractors*[c]
Member States				
First response during the war				
Kuwait		■	■	
European Union/Danish Emergency Management Agency		■		
Norway		■	■	
Post-war assistance				
Norway	▨	■	■	
Canada (Canadian International Development Agency)				■▨
Cyprus			■	
Finland			■	
France		■	■	
Germany		■		
Italy		■	■	
Monaco			■	
Spain[d]		■	■	▨
Sweden		■		
Switzerland (Swiss Agency for Development and Cooperation)				■
Japan				■
United States (United States Agency for International Development)				■▨
Regional organizations				
League of Arab States/Egypt		■		
International organizations				
United Nations Development Programme	■			
World Bank		■		
United Nations Environment Programme, Post-Conflict Branch, and Office for the Coordination of Humanitarian Affairs		■		
Food and Agriculture Organization of the United Nations		■		

	Cash contributions	*Technical assistance*[a]	*Equipment*[b]	*Contractors*[c]
Regional financial institutions				
Organization of the Petroleum Exporting Countries (Fund for International Development)				
International financial institutions				
None				
International non-governmental organizations				
International Union for Conservation of Nature — West Africa, Central Asia and North Africa office and Mediterranean offices				
Green peace				
International private sector				
Recoverit International, Australia				

[a] Transfer of technical know-how by experienced personnel for activities related to oil-spill recognition, evaluation and control activities.

[b] Hardware and software (consumables) for the purpose of oil-spill recognition, evaluation and control activities.

[c] Contractors are third parties contracted to undertake oil-spill recognition, evaluation and control activities and are directly sub-contracted by development partners.

[d] Phase II work funded by the Government of Spain was carried out through the Spanish Agency for International Cooperation and Development.

Phase I development partner.

Phase II development partner.